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10/694,617	10/27/2003	Steven M. Powell	2802-159-030	5140
7590 John A. Molnar, Jr. PARKER-HANNIFIN CORPORATION 6035 Parkland Boulevard Cleveland, OH 44124-4141			EXAMINER BRINSON, PATRICK F	
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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* STEVEN M. POWELL, RONALD A. MONER, JAMES L.  
JOHNSTON, JOHN R. GRECO, and NICK A. MARTINO

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Appeal 2008-3473  
Application 10/694,617  
Technology Center 3700

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Decided:<sup>1</sup> March 24, 2009

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*Before:* JENNIFER D. BAHR, LINDA E. HORNER, and MICHAEL W.  
O'NEILL, *Administrative Patent Judges.*

BAHR, *Administrative Patent Judge.*

DECISION ON APPEAL

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

## STATEMENT OF THE CASE

Steven M. Powell et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 36 and 37. The Examiner has objected to claims 38-40 as depending from a rejected claim but otherwise being allowable. The Examiner has withdrawn claims 1-35 and 41-43, the only other claims pending in the application, from consideration. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

### *The Invention*

Appellants' claimed invention is directed broadly to multi-layer tubular polymeric composites and to articles such as hoses and tubing. Specification 1:6-7. Claim 36, reproduced below, is representative of the claimed subject matter.

36. A tubular polymeric composite member comprising:

    a first layer comprising a first thermoplastic selected from the group consisting of polyamides, and copolymers and blends thereof; and

    a second layer bonded directly to the first layer comprising a second thermoplastic polymeric selected from the group consisting of polyurethanes, and copolymers and blends thereof,

    wherein the second thermoplastic material has a durometer of between about 63 Shore D and 83 Shore D.

### *The Rejection*

Appellants seek review of the Examiner's rejection of claims 36 and 37 under 35 U.S.C. § 103(a) as being unpatentable over Douchet (US

5,706,865, issued Jan. 13, 1998) and Gray (US 4,380,252, issued Apr. 19, 1983).<sup>2</sup>

## SUMMARY OF DECISION

We AFFIRM.

### ISSUE

Appellants state that claim 37 stands or falls with independent claim 36, from which it depends. Appeal Br. 3. Therefore, the only issue presented in this appeal is whether Appellants demonstrate the Examiner erred in concluding that the combined teachings of Douchet and Gray render obvious the subject matter of claim 36. This issue turns in particular on whether the combined teachings of Douchet and Gray would have prompted a person of ordinary skill in the art to form Douchet's layer 3 of hot melt polyurethane having a durometer between about 75 (Shore A) and about 63 (Shore D) as taught by Gray, as proposed by the Examiner. Appellants argue that because the hot melt layer 3 of Douchet is a thin layer used as an adhesive or bonding agent, and not a structural component of the hose, such as the core tube 12 of Gray, on which the Examiner relies for the teaching of a hardness value, one of ordinary skill in the art would not have been motivated to modify Douchet as proposed by the Examiner. Appeal Br. 5. Appellants further argue that to modify the hot melt adhesive of Douchet in

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<sup>2</sup> The Examiner has not explicitly recited the ground of rejection in Section "(9) Grounds of Rejection" of the Answer. We presume from the Examiner's statement agreeing with Appellants' statement of the grounds of rejection to be reviewed on appeal (Answer 3) that claims 36 and 37 are rejected as indicated in the Final Rejection, mailed June 16, 2006.

any manner other than as specified in Douchet would destroy its intended function as an adhesive. Appeal Br. 6.

#### FACTS PERTINENT TO THE ISSUE

1. Douchet discloses a tubular polymeric composite member (tube 1) for high pressure fluid, the tube comprising an inner core 2 (first layer) formed from a plurality of polyamide layers, a layer 3 of hot melt polyurethane extruded onto the inner core, and a cover, braid or knit of fibers 4 fitted on the layer 3 as a tight reinforcement. Douchet, col. 1, ll. 3-4; col. 2, ll. 44-45 and 52-56; col. 3, l. 13; fig. 2.
2. Douchet teaches a pipe composition wherein the bonding agent of layer 3 is not allowed to pass through the gaps in the filamentary structure of reinforcement 4. Douchet, col. 3, ll. 8-10 and 12-14.
3. Douchet does not explicitly disclose the durometer of the hot melt polyurethane layer 3.
4. Gray teaches a high pressure hose comprising a core tube 12 of polymeric material, such as polyurethane, that is “generally dimensionally stable and self-supporting such that it has substantial hardness and stiffness (modulus) at its outer surface, so that it does not flow or displace substantially into the vacant spaces formed along the undersurface of reinforcement layer 16.” Gray, col. 1, ll. 5-7; col. 2, ll. 40-45. According to Gray, preferably, the tube 12 has a durometer of from about 75 (Shore A) to about 63 (Shore D).
5. Appellants have not presented any evidence showing that a durometer from about 75 (Shore A) to about 63 (Shore D) as taught by Gray is inconsistent with, or unsuitable for, a hot melt polyurethane adhesive.

6. The combined teachings of Douchet and Gray suggest that a durometer of 63 Shore D would be a sufficient hardness to prevent the hot melt polyurethane layer 3 from passing through the gaps of the reinforcement 4.

## PRINCIPLES OF LAW

Section 103 forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

*KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, \_\_\_, 127 S. Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of ordinary skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also* *KSR*, 550 U.S. at \_\_\_, 127 S. Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

While there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at \_\_\_, 127 S. Ct. at 1741 (2007).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*Id.* at \_\_\_, 127 S. Ct. at 1740. We must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.*

Where the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, the proposed modification would not have been obvious. *See Tec Air Inc. v. Denso Mfg. Michigan Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999).

## ANALYSIS

As shown by our findings above, Douchet discloses a pipe meeting all of the limitations of claim 36, with the exception that Douchet does not explicitly disclose the durometer of the hot melt polyurethane layer 3. While Douchet does not expressly specify a durometer, Douchet does teach a pipe composition wherein the bonding agent of layer 3 is not allowed to pass through the gaps in the filamentary structure of reinforcement 4. Gray teaches that a durometer of from about 75 (Shore A) to about 63 (Shore D) is a sufficient hardness to prevent flow or substantial displacement of a polyurethane tube material into the vacant spaces formed along the

undersurface of a reinforcement layer. The combined teachings of Douchet and Gray would have suggested to a person of ordinary skill in the field of composite high pressure tubing at the time of Appellants' invention that a hardness of about 63 Shore D would be a sufficient hardness to prevent the hot melt polyurethane layer 3 from passing through the gaps in the filamentary structure of reinforcement 4. Accordingly, consistent with the teachings of Douchet, a person of ordinary skill in the art would have been prompted to select a hot melt polyurethane possessing such a hardness for the layer 3. We appreciate that the hot melt layer 3 of Douchet and the core tube 12 of Gray are structurally different and serve different fundamental purposes. Nevertheless, they do possess at least one common characteristic, namely, a hardness sufficient to prevent flow or displacement of the material into the gaps or spaces in a reinforcement layer fitted thereon. A person of ordinary skill in the art thus would have considered pertinent the teachings of Gray with respect to hardness.

Appellants' argument that modifying the hot melt adhesive of Douchet in any manner other than as specified in Douchet would destroy its intended function as an adhesive is not persuasive of error in the rejection. Douchet does not specify any durometer of the hot melt polyurethane layer, other than to indicate that it does not pass through reinforcement layer 4. In other words, Douchet provides no disclosure of a durometer that conflicts with the durometer taught by Gray. Therefore, Douchet does not support Appellants' supposition that the proposed modification is other than as specified in Douchet. Furthermore, Appellants have not presented any evidence showing that a durometer from about 75 (Shore A) to about 63 (Shore D) as taught by Gray is inconsistent with, or unsuitable for, a hot



melt polyurethane adhesive to support their argument that such a hardness would destroy the function of layer 3 as an adhesive. An attorney's arguments in a brief cannot take the place of evidence. *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

### CONCLUSION OF LAW

Appellants do not demonstrate the Examiner erred in concluding that the combined teachings of Douchet and Gray render obvious the subject matter of claim 36. Consequently, Appellants fail to show error in the Examiner's rejection of claim 36, or claim 37, which falls with claim 36.

### DECISION

The Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

### AFFIRMED

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